

IOWA DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL SERVICES DIVISION

PROGRAM IMPLEMENTATION GUIDANCE

**TOPIC: Stockpiling Requirements for Dry Manure from Confinement Feeding Operations**

Procedure Number: 5-b-24

Replaces Number: 5-b-22

Effective Date: September 1, 2008

Expiration Date: End of rule-making effort

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Approval: WQ Bureau Chief:

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**Synopsis of Guidance:** This document provides guidance for stockpiling of dry manure from confinement feeding operations prior to land application.

**Applicable Iowa Code (COI) or IAC provisions:** COI 459.311(1), 567 IAC 65.2(3)

**Attachment:**

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**Background:** Many livestock producers have adopted a practice of "stockpiling" dry manure from confinement feeding operations on land near the confinement facility or in crop production fields. These stockpiles occur when manure is removed from the confinement feeding operation structure and crop production fields are not available for land application or field conditions prevent such application. While the intent is generally to store the manure until land application is possible, in some cases the manure may be stored for over a year before land application occurs.

Stockpiling without an appropriate manure storage structure does not meet the requirements of the COI and IAC which require confinement feeding operations, including small animal feeding operations (SAFOs), to retain all manure produced by the operation between periods of manure application.

**Issue:** While the requirement to retain all manure between periods of manure application has been in the COI since 1995, and in the IAC even longer, the requirement has not been universally enforced. Stockpiles from confinement operations that caused environmental impairment were dealt with on a case-by-case basis.

Changes in the types of livestock facilities are resulting in increasing amounts of solid manure generation. Included in this increase are additional poultry facilities (both chicken and turkey), hog hoop barns, and cattle confinements utilizing dry bedding packs. Since, by definition, dry manure cannot be pumped, handling dry manure presents both challenges and opportunities for utilization of the nutrients in an environmentally friendly manner.

**Discussion:** The COI addresses stockpiling of manure solids from open feedlot operations (459A.403), but does not specifically address stockpiling manure from confinement feeding operations. However, the COI states that manure from confinement feeding operations must be retained between periods of manure application (459.311(1))

Since the COI makes a clear distinction between open feedlot operations and confinement feeding operations, including separate chapters in the COI, it is apparent that the requirements for one type of operation are not approved for the other type of operation, unless specifically stated. Therefore, the solids stockpiling requirements listed for open feedlot operations are not appropriate for confinement feeding operations.

However, it is recognized that dry manure from confinement feeding operations has special characteristics that distinguish it from other types of confinement manure (liquid). Furthermore, in some cases, stockpiling manure in an appropriate manner and in an appropriate location may improve environmental performance over traditional storage and land application methods. 567 IAC 65.2(5) provides: "In lieu of using the manure control methods specified in subrule 65.2(1), 65.2(2), or 65.2(3), the department may allow the use of manure treatment or other methods of manure control if it determines that an adequate level of manure control will result." It is concluded that the following requirements qualify as "other methods of manure control" that result in an adequate level of manure control for dry manure stockpiles pursuant to this subrule.

Several concerns must be overcome before stockpiling dry manure, prior to land application, can be done in an environmentally sound manner:

- Prevention of contamination of surface water by runoff from stockpiles
- Protection of groundwater

- Reduction of nuisance conditions, including odor and vectors.

Proper site selection for stockpiles and reduction of precipitation falling on the stockpiles can reduce or eliminate many of the aforementioned concerns. It is expected that rule-making will be initiated in the future on this subject and this guidance document will be rescinded when the rule-making effort is completed.

#### **Definitions:**

- "Dry manure", for the purposes of this guidance document, must meet all of the following requirements:
  1. The solids do not flow perceptibly under pressure
  2. The solids are not capable of being transported through a mechanical pumping device designed to handle a liquid.
  3. The constituent molecules of the solids do not flow freely among themselves but do show the tendency to separate under stress.
  4. Consist of a minimum of 20% solids, by weight.
- "Permanent" or "long-term" stockpiles are usually located at or near the livestock facility where the manure was generated. Long-term stockpiles are defined as stockpiles that remain in place more than 6 months out of a two-year period. Any stockpile located within 1,250 feet of the original stockpile will be considered as the same stockpile for the purpose of determining whether the stockpile has remained in place more than 6 months out of a two-year period.
- "Short-term stockpiles are usually located on or near the proposed application field. Short-term stockpiles are defined as stockpiles that remain in place more than 15 days but 6 months or less out of a two-year period. . Any stockpile located within 1,250 feet of the original stockpile will be considered as the same stockpile for the purpose of determining whether the stockpile has remained in place more than 15 days.
- "Temporary" stockpiles are usually located on or near the land application field. These piles are often used as a staging area for the trucks to dump in advance of the application process. A "temporary" stockpile remains in place no more than 15 days.

**Guidance:** Except as provided below, all confinement feeding operations that stockpile dry manure from their facilities are required to comply with the provisions of this document, including SAFOs. Stockpiles located at confinement feeding operations constructed before January 1, 2006, and not expanded thereafter, that are not in compliance with the following provisions of this document will be dealt with on a case-by-case basis dependent on performance.

Except as provided above, all stockpiles must meet the following minimum separation distance requirements:

- Not located within 400 feet of a designated area.
- Not located within 1250 feet of a residence.
- Not located within 800 feet of a high quality water resource.
- Not located within 200 feet of a surface tile intake.
- Short-term or long-term stockpiles are not allowed in the 100-year floodplain of a major water source.
- Not located on land having a slope of more than three percent unless methods, structures, or practices are implemented to contain the stockpiled dry manure.
- The stockpiles must be located only on soils classified as acceptable throughout the top five feet of soil profile. (Note: see chart in Iowa Administrative Code, 567—Chapter 121, page 3).
- In karst terrain, the area where dry manure is stockpiled must have a vertical separation distance of at least five feet between the bottom of the manure and the underlying limestone, dolomite, or other soluble rock. In addition, long-term stockpiles on karst terrain must be maintained on reinforced concrete at least five inches thick.

In addition, stockpiles must be located away from areas where concentrated runoff (such as waterways) and ponding occur.

### **Short-term Stockpiles**

For the duration of the stockpile, a cover with materials impermeable to precipitation must be maintained. The pile must be entirely covered.

### Long-term Stockpiles

Long-term stockpiles must comply with either of the following:

- 1) For the duration of the stockpile, a cover with materials impermeable to precipitation must be maintained. The pile must be entirely covered.
  - Maintain an all-weather surface under the stockpile, with compacted earth, compacted granular aggregates, asphalt, concrete, or other similar materials.
  - Information regarding construction of the compacted base must be documented, recorded and available for inspection.

2) Maintain the stockpiled dry manure in either of the following:

- A building.
- A roofed structure other than a building that is all of the following.

Impermeable to precipitation.

Constructed using wood, steel, aluminum, vinyl, plastic, or other similar materials.

Constructed with walls or other means to prevent surface runoff into the stockpile.